

## CLAIMS

The following listing of claims replaces all prior versions and listings of claims in the above-referenced application:

1        1. (Currently amended) A rate adaptive system for optical  
2 communication networks comprising:

3              a plurality of optical transceivers capable of transmitting and receiving optical  
4 signals at a plurality of rates to each other, and

5              an optical fibre linked to said optical transceivers, ~~wherein~~ said system is  
6 configured to cause said optical transceivers to transmit and receive optical signals at  
7 an initial rate and to adapt said initial rate based upon an error condition responsive to  
8 an optical signal parameter by causing said optical transceivers to transmit and  
9 receive at a different rate, wherein the error condition comprises one of a code word  
10 violation and an optical modulation amplitude.

1        2. (Previously presented) The system of claim 1, wherein said error  
2 condition is a failure to synchronize a received signal.

1        3. (Previously presented) The system of claim 1, wherein said system  
2 is further configured to calculate an error coefficient based on said received signals,  
3 and said error condition comprise said error coefficient exceeding a predefined range.

1        4. (Previously presented) The system of claim 1, wherein said initial  
2 rate is lowered according to predefined percentages of said initial rate in response to  
3 said error condition.

1        5. (Previously presented) The system of claim 4, wherein said  
2 percentages are selected from the group of 75, 50 and or 25 percent of said initial rate.

1        6. (Previously presented) The system of claim 1, wherein said initial  
2 rate is 10 Gb/s.

1           7. (Previously presented) The system of claim 1, wherein said system  
2 is configured to operate in an optical Ethernet network.

1           8. (Previously presented) The system of claim 1, wherein said system  
2 is further configured to notify a network operator in the event of said error condition.

1           9. (Currently amended) A rate adaptive method for operating an  
2 optical communication network, comprising:

3           transmitting data at an initial rate,  
4           receiving said data at said initial rate,  
5           evaluating said data responsive to a parameter observed on an optical signal to  
6 determine if an error condition exists, wherein the error condition comprises one of a  
7 code word violation and an optical modulation amplitude, and  
8           adapting said rate based upon said evaluation by transmitting and receiving at  
9 a different rate.

1           10. (Previously presented) The method of claim 9, wherein adapting  
2 said rate comprises lowering said initial rate according to predefined percentages of  
3 said initial rate in response to said error condition.

1           11. (Previously presented) The method of claim 10, further comprising  
2 notifying a network operator in the event of said error condition.

1           12. (Currently amended) An optical transceiver module for a rate  
2 adaptive system for optical communication networks comprising

3           means for transmitting an optical signal via an optical fibre at a plurality of  
4 optical signal rates,  
5           means for receiving an optical signal transmitted at said plurality of optical  
6 signal rates,

7           means for determining an error condition responsive to a parameter derived  
8 from observation of the optical signal, wherein the error condition comprises one of a  
9 code word violation and an optical modulation amplitude, and

10           means for adapting an optical signal transmission rate based upon the error  
11          condition by transmitting and receiving at a different rate.

1           13. (Currently amended) A rate adaptive method for operating an  
2          optical communication network, comprising:  
3           transmitting test signals at an initial rate,  
4           receiving said test signals at said initial rate,  
5           evaluating said test signals to determine if an error condition exists, wherein  
6          the error condition comprises one of a code word violation and an optical modulation  
7          amplitude, and  
8           adapting said rate based upon said evaluation by transmitting and receiving at  
9          a different rate.